Test Report: SPWM-150-24

150W Constant Voltage PWM Output LED Driver

■ DESIGN VERIFY TEST

Output Function Test
Input Function Test
Protection Function Test
Component Stress Test

■ SAFETY & E.M.C. TEST

Safety Test
E.M.C. Test

■ RELIABILITY TEST

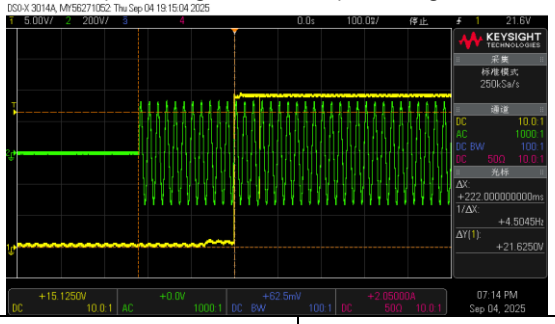
ENVIRONMENT TEST

■ DESIGN VERIFY TEST

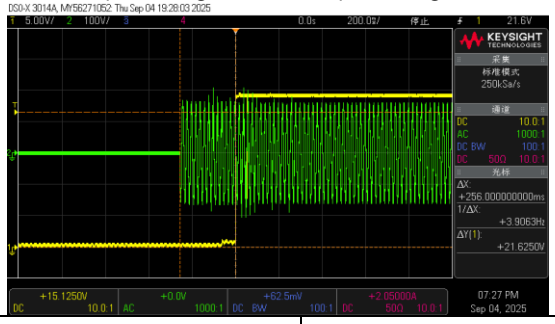
OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	DIMMING RANGE	0~100%	I/P: 230 VAC I/P:115VAC O/P:FULL LOAD Ta:25℃	0.12%~ 98.5% / 3.2KHz
2	VOLTAGE ADJ. RANGE	23 V ~ 26 V	I/P: 230 VAC I/P:115VAC O/P:NO LOAD Ta:25℃	Test : 22.5 V~26.6 V/ 230V 23.5 V~ 26.6 V/115V
3	OVER/UNDERSHOOT TEST	3 ± 5%	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	TEST: 1.96 %
4	SET UP TIME (Max)	230VAC/ 500ms 115VAC/ 1200 ms	I/P: 230 VAC I/P: 11VAC O/P:FULL LOAD Ta:25℃	230VAC/ 222 ms 115 VAC/256 ms

INPUT=230VAC/50HZ @ FULL LOAD
CH1 : Output Voltage CH2 : AC Input Voltage

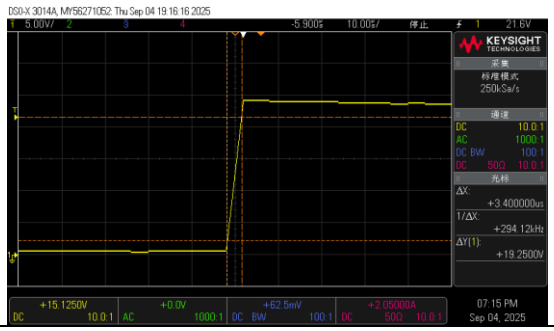


INPUT=115VAC/60HZ @ FULL LOAD
CH1 : Output Voltage CH2 : AC Input Voltage

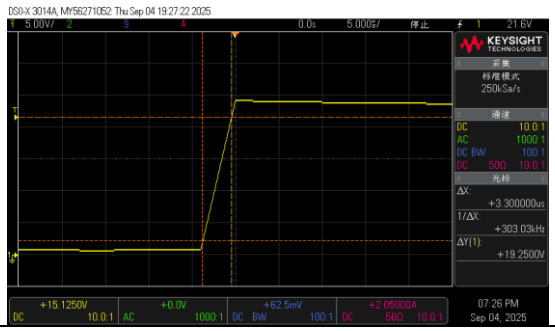


NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
5	RISE TIME (Max)	230VAC/ 80 ms 115VAC/ 80 ms	I/P: 230 VAC I/P: 11VAC O/P:FULL LOAD Ta:25℃	230VAC/ 0.0034 ms 115 VAC/ 0.0033 ms

INPUT=230VAC/50HZ @ FULL LOAD
CH1 : Output Voltage

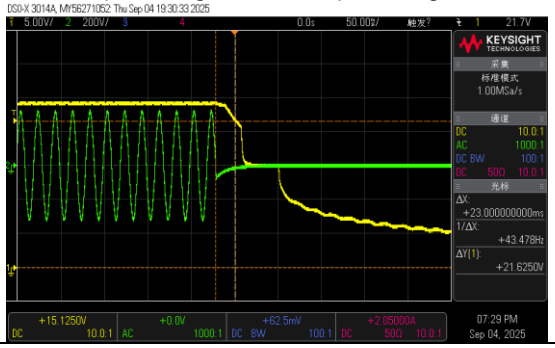


INPUT=115VAC/60HZ @ FULL LOAD
CH1 : Output Voltage

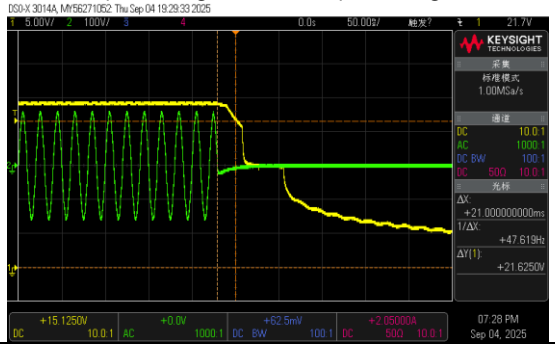


6	HOLD UP TIME (Typ.)	230VAC/ 10 ms 115VAC/ 10 ms	I/P: 230 VAC I/P: 11VAC O/P:FULL LOAD Ta:25℃	230VAC/ 23 ms 115 VAC/ 21 ms

INPUT=230VAC/50HZ @ FULL LOAD
CH1 : Output Voltage CH2 : AC Input Voltage

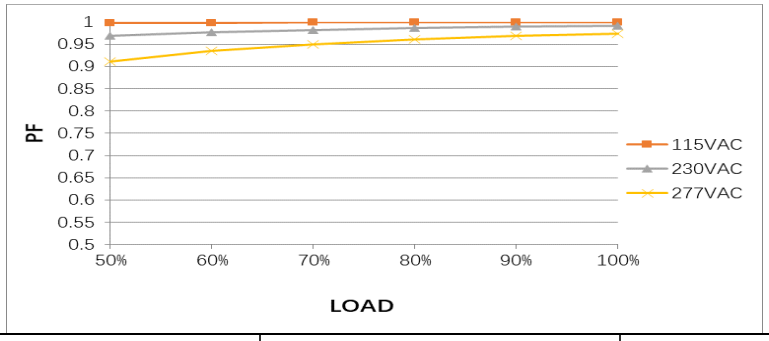
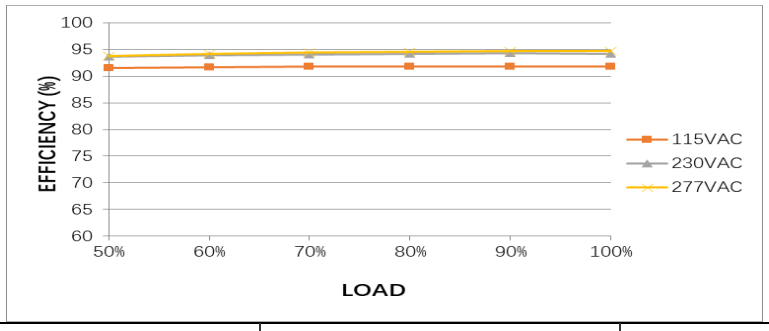
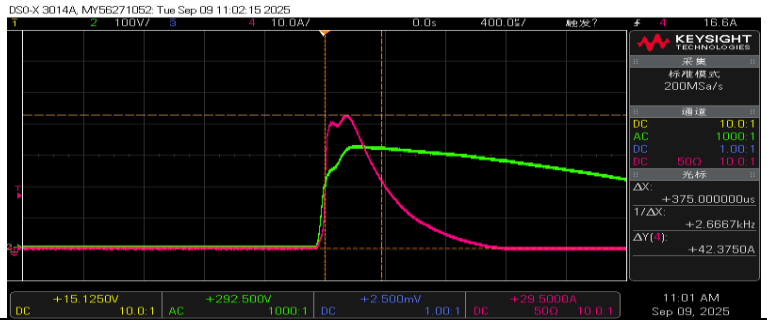


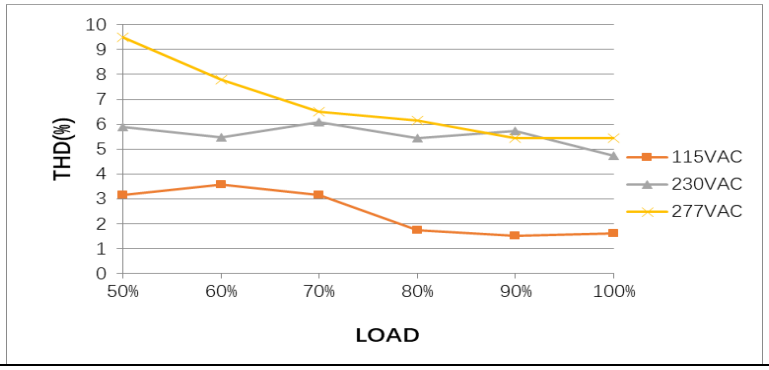
INPUT=115VAC/60HZ @ FULL LOAD
CH1 : Output Voltage CH2 : AC Input Voltage



INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	100VAC~305 VAC 156VDC~410VDC	(1) I/P:TESTING O/P:FULL LOAD (2) I/P:DC TESTING(L:+ N:-) O/P: FULL / 50% LOAD (3) I/P:DC TESTING(L:- N:+) O/P: FULL / 50% LOAD (4) I/P: LOW-LINE=156VDC HIGH-LINE=410VDC O/P: Dimming on/off Ta:25℃	(1) 100 V~ 305 V (2) 156Vdc ~ 410Vdc/FULL LOAD 156Vdc~410Vdc/50% LOAD (3)156 Vdc~410Vdc/FULL LOAD 156Vdc~410Vdc/50% LOAD (4) OK
			I/P: LOW-LINE-3V=97V HIGH-LINE+10V=315 V O/P:FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	TEST: OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P: 110 VAC ~305VAC O/P:FULL~MIN LOAD Ta:25℃	OK
3	INPUT CURRENT (TYP)	277 VAC/ 0.8 A 230 VAC/ 1.0 A 115VAC/ 1.5 A	I/P: 277VAC I/P: 230VAC I/P: 115VAC O/P:FULL LOAD Ta:25℃	I = 0.59 A/ 277VAC I = 0.70 A/ 230VAC I = 1.42 A/115VAC

4	LEAKAGE CURRENT	< 0.25mA / 277 VAC	I/P： 277 VAC O/P：Min LOAD Ta：25℃	L-FG: 0.0124 mA N-FG: 0.0111 mA
5	STANDBY POWER CONSUMPTION	<0.5W (Dimming off)	I/P: 230VAC O/P：DIM OFF Ta：25℃	0.4329W/230VAC
6	POWER FACTOR(TYP)	0.92 /277 VAC 0.95 /230 VAC 0.97 /115 VAC	I/P: 277VAC I/P: 230VAC I/P: 115VAC O/P: FULL LOAD Ta:25℃	PF= 0.974 /277VAC PF= 0.992 /230VAC PF= 0.999 /115VAC
	P.F vs LOAD 			
7	EFFICIENCY (TYP)	93 %	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	94.2%
	EFFICIENCY vs LOAD 			
8	INRUSH CURRENT (TYP)	230 V/ 55 A COLD START (twidth=500us measured at 50% Ipeak) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	I = 42.4A/ 230VAC T50= 375 us
	INPUT=230VAC/50HZ @ FULL LOAD CH4 : Input current CH2: AC Input Voltage 			

9	TOTAL HARMONIC DISTORTION	THD<10% @load≧ 50%/115VAC, 230VAC; @load≧ 75%/277VAC	I/P：115VAC /230VAC/277VAC O/P：75% LOAD 50% LOAD Ta：25℃	 THD： 5.88 %/230VAC*50%load THD： 3.16 %/115VAC*50%load THD： 6.51 %/277VAC*75%load
	THD&LOAD  			

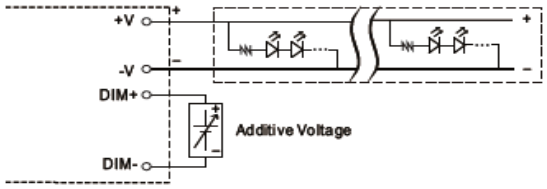
PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105 % ~ 150 %	I/P: 305VAC I/P: 230VAC I/P: 110VAC O/P:TESTING Ta:25℃	126.03 %/ 305VAC 124.76 %/ 230VAC 126.03 %/ 110VAC Protection type： Hiccup mode, recovers automatically after fault condition is removed.
2	OVER VOLTAGE PROTECTION	V1: 27 V~ 36 V	I/P: 305VAC I/P: 230VAC I/P: 110VAC O/P:MIN LOAD Ta:25℃	28.8 V/ 305VAC 28.8 V/ 230VAC 28.8 V/ 110VAC Protection type： Shut down O/P voltage, re-power on to recover after fault condition is removed
3	OVER TEMPERATURE PROTECTION	NO DAMAGE	I/P: 305 VAC I/P: 110 VAC O/P:FULL LOAD	O.T.P Active Protection type： Shut down O/P voltage, re-power on to recover after fault condition is removed
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 305VAC I/P: 110 VAC O/P: FULL LOAD Ta:25℃	NO DAMAGE Protection type： 【For Blank type】: Shut down O/P voltage, re-power on to recover after fault condition is removed. 【For DA2/DA2Q type】: Hiccup mode, recovers automatically after fault condition is removed.

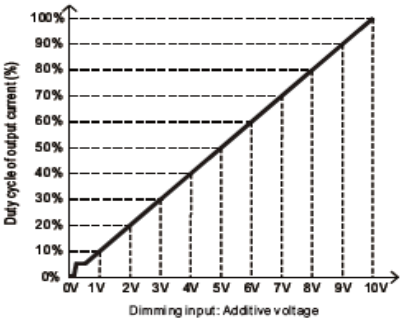
CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	DIMMING OPERATION (Blank Type)	※ 3 in 1 dimming function • Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-: 0 ~ 10VDC, or 10V PWM signal or resistance. • Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers. • Dimming source current from power supply: 100μA (typ.)		

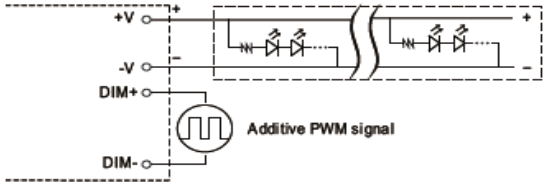
◎ Applying additive 0 ~ 10VDC



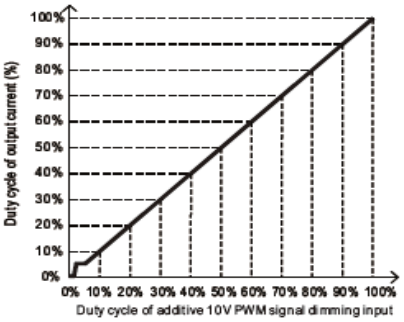
"DO NOT connect "DIM- to -V"



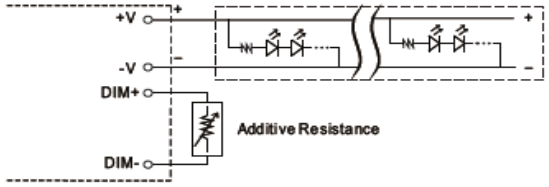
◎ Applying additive 10V PWM signal (frequency range 300Hz~3KHz):



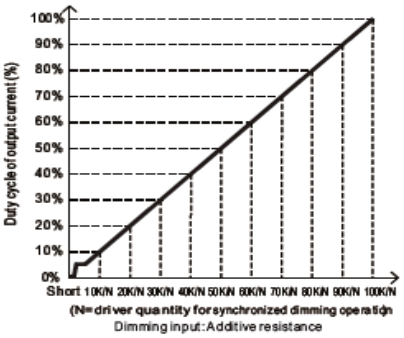
"DO NOT connect "DIM- to -V"



◎ Applying additive resistance: 0~100kΩ



"DO NOT connect "DIM- to -V"



Note : 1. Min. dimming level is about 6% and the output current is not defined when 0% < Iout < 6%.
2. The output current could drop down to 0% when dimming input is about 0kΩ or 0Vdc, or 10V PWM signal with 0% duty cycle.

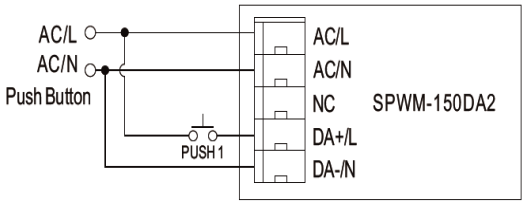
I/P : 230 VAC ; O/P : DIMMING TEST ;Ta : 25℃

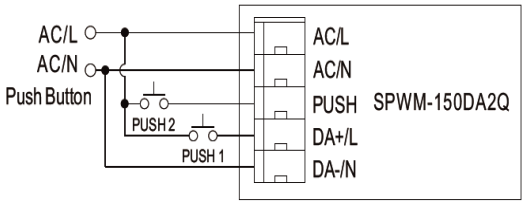
	Resistance value	Short	10K	20K	30K	40K	50K	60K	70K	80K	90K	100K	OPEN
1	Output Current	0	0.665 A	1.269 A	1.871 A	2.479 A	3.100 A	3.710 A	4.340 A	5.040 A	5.720 A	6.410A	6.430 A
	Output Current duty	0%	10.56 %	20.14 %	29.70 %	39.35 %	49.21 %	58.89 %	68.89 %	80.00 %	90.79 %	101.75 %	102.06 %
2	Dimming value	0V	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
	Output Current	0	0.672 A	1.262 A	1.859 A	2.446 A	3.046 A	3.661 A	4.280 A	4.870 A	5.580 A	6.290A	6.270 A
	Output Current duty	0%	10.67 %	20.03 %	29.51 %	38.83 %	48.35 %	58.11 %	67.94 %	77.30 %	88.57 %	99.84 %	99.52 %
3	Duty value	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
	Output Current	0	0.697 A	1.296 A	1.895 A	2.492 A	3.096 A	3.710 A	4.330 A	4.980 A	5.570 A	6.250A	6.330 A
	Output Current duty	0%	11.06 %	20.57 %	30.08 %	39.56 %	49.14 %	58.89 %	68.73 %	79.05 %	88.41 %	99.21 %	100.48 %

2 PUSH DIMMING OPERATION (DA2/DA2Q Type)

※PUSH dimming (primary side), for DA2/DA2Q Model

• Intput wiring diagram





• The factory default dimming level is at 100%.
• Up to 10 drivers can perform the PUSH dimming at the same time when utilizing one common push button.
• The maximum length of the cable from the push button to the last driver is 20 meters.

Action	Action duration
Short Push	0.1~1s
Long Push	>1s

Push Button functionally

Model	Application	Dip Switch 1	2	3	Push 1 for brightness	Push 2 for colour
DA2 Type	1 logic unit of LED (DT6,Brightness Dimming)				Short Push : ON/OFF Long Push : Dim up/down. - dim up stop at maximum; dim down stop at minimum dim (not dim off) - with next push, direction change(up/down) - dim up possible even if when unit is OFF	**This model does not feature this button.**
DA2Q Type	1 logic unit of LED (DT6,Brightness Dimming)	ON	ON	ON	Short Push : ON/OFF Long Push : Dim up/down. - dim up stop at maximum; dim down stop at minimum dim (not dim off) - with next push, direction change(up/down) - dim up possible even if when unit is OFF	Short Push : no response Long Push : no response
	4 logic unit of LED (DT6,Brightness Dimming)	ON	ON	OFF	**4 control gears are synchronously controlled** Short Push : ON/OFF Long Push : Dim up/down. - dim up stop at maximum; dim down stop at minimum dim (not dim off) - with next push, direction change(up/down) - dim up possible even if when unit is OFF	Short Push : no response Long Push : no response
	1 logic unit of colourtype RGBW (DT8, RGBW colour control) (factory default)	OFF	OFF	OFF	Short Push : ON/OFF Long Push : Dim up/down. - dim up stop at maximum; dim down stop at minimum dim (not dim off) - with next push, direction change(up/down) - dim up possible even if when unit is OFF	Short Push : Switch to "W channel control" or "RGB color control". Long Push : Dimming "W channel control" or "RGB color control". -W channel control: Long press to dim up stop at maximum. Long press to dim down stop at minimum(0). -RGB color control: Long press to change RGB color.
	1 logic unit of colour type Tc (DT8, Tunable white control)	ON	OFF	OFF	Short Push : ON/OFF Long Push : Dim up/down - dim up stop at maximum; dim down stop at minimum dim (not dim off) - with next push, direction change(up/down) - dim up possible even if when unit is OFF	Short Push : ON/OFF Long Push : Dim2Warm - The color temperature warms up while the brightness dims, and the color temperature cools down while the brightness brightens. - dim up stop at maximum; dim down stop at minimum dim (not dim off) - with next push, direction change (up,cooler/down,warmer) - dim up possible even if when unit is OFF

Model		Dip Switch 1	2	3	PUSH 1 for brightness	PUSH 2 for colour
DA2Q Type	2 logic units of colour type Tc (DT8. Tunable white control)	OFF	ON	OFF	**2 control gears are synchronously controlled** Short Push : ON/OFF Long Push : Dim up/down - dim up stop at maximum; dim down stop at minimum dim (not dim off) - with next push, direction change(up/down) - dim up possible even if when unit is OFF	**2 control gears are synchronously controlled** Short Push : ON/OFF Long Push : Dim2Warm - The color temperature warms up while the brightness dims, and the color temperature cools down while the brightness brightens. - dim up stop at maximum; dim down stop at minimum dim (not dim off) - with next push, direction change (up,cooler/down,warmer) - dim up possible even if when unit is OFF
	2 logic units (1 logic unit of DT6) (1 logic unit of colour type Tc)	OFF	OFF	ON	**Only the DT6 device responds** Short Push : ON/OFF Long Push : Dim up/down - dim up stop at maximum; dim down stop at minimum dim (not dim off) - with next push, direction change(up/down) - dim up possible even if when unit is OFF	**Only the DT8 device responds** Short Push : ON/OFF Long Push : Dim2Warm - The color temperature warms up while the brightness dims, and the color temperature cools down while the brightness brightens. - dim up stop at maximum; dim down stop at minimum dim (not dim off) - with next push, direction change (up,cooler/down,warmer) - dim up possible even if when unit is OFF

I/P : 230 VAC

O/P : DIMMING TEST

Ta : 25℃

TEST RESULT : OK

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q3 Rated 650V/11 A	AC ON/OFF I/P:High-Line +3V =308V O/P: (1)Full Load input (2)Output Short (3)Dimming off (4)OLP (5) No Load VDS: I/P:Low-Line -3V = 107V O/P: (1)Full Load input (2)Output Short (3)Dimming off (4)OLP (5) No Load Ta:25℃	 VDS: (1) 484V (2) 487V (3) 479V (4) 483V (5) 483V VDS: (1) 499V (2) 504V (3) 499V (4) 495V (5) 499V

2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated 650V/25 A	AC ON/OFF I/P:High-Line +3V =308 V O/P: (1)Full Load input (2)Output Short (3)Dimming off (4)OLP (5) No Load I/P:Low-Line -3V = 107V O/P: (1)Full Load input (2)Output Short (3)Dimming off (4)OLP (5) No Load Ta:25℃	 VDS: (1) 524V (2) 512V (3) 471V (4) 504V (5) 495V VDS: (1) 560V (2) 556V (3) 560V (4) 556V (5) 548V
3	P.F.C DIODE	D5 Rated 8A/ 600V	AC ON/OFF I/P:High-Line +3V =308 V O/P: (1)Full Load input (2)Output Short (3)Dimming off (4)OLP (5) No Load I/P: Low-Line -3V = 107V O/P: (1)Full Load (2)Output Short (3)Dimming off (4)OLP (5) No Load Ta:25℃	 (1) 467V (2) 459V (3) 459V (4) 443V (5) 459V (1) 459V (2) 459V (3) 459V (4) 459V (5) 459V
4	Diode Peak Voltage	Q100 Rated 120A/80 V	AC ON/OFF I/P: High-Line +3V =308 V O/P: (1)Full Load (2)Output Short (3) Dimming off (4) OLP (5).NO LOAD Ta:25℃	 VDS: (1) 59.9V (2) 59.1V (3) 58.3V (4) 59.1V (5) 57.5V
5	Input Capacitor Voltage	C5/C6 Rated: 68μ / 450V Surge voltage: 580V	I/P:High-Line +3V =308V O/P: (1)Full Load input on/off (2) Min load input on /Off (3)Full Load /Min load Change (4)Full load continue Ta:25℃	 (1) 455V (2) 455V (3) 455V (4) 443V

6	Control IC Voltage Test	PWM IC U2Rated 10V~27V PFC IC U1 Rated -0.3 V~ 27V MCU IC U602 Rated 1.7 V~ 3.6 V	AC ON/OFF I/P:High-Line +3V =308 V O/P:(1) Full Load (2) Output Short (3) O.L.P (4) O.V.P. (5) No Load VR min (Low Line) (6) DIM OFF Ta:25℃	U2 (1) 16.0V (2) 16.0V (3) 15.8V (4) 16.0V (5) 12.9V (6) 12.9V U1 (1) 16.0V (2) 15.8V (3) 16.0V (4) 15.8V (5) 12.9V (6) 12.9 V U602 (1)3.300V (2)3.299V (3)3.300V (4)3.300V (5)3.298V (6)3.300V
7	DIMMING MOS (DA2Q type)	Q110/ Q113 Rated： 60V/68A	AC ON/OFF I/P：High-Line +3V = 308 V O/P：(1) Full Load (2) Output Short (3) Dim on/off Ta：25℃	Q110 (1) 22.6V (2) 25.8V (3) 19.8 V Q113 (1) 19.8V (2) 20.6V (3) 17.2V

■ SAFETY & EMC TEST REPORT

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 3.75 K VAC/min	I/P-O/P: 4.125 KVAC/min Ta:25℃	I/P-O/P: 0.97 mA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P: 500 VDC>100MΩ	I/P-O/P: 500 VDC Ta:25℃	I/P-O/P: >9999 MΩ NO DAMAGE

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS C	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25℃	PASS
2	CONDUCTION	EN55015 CLASS B	I/P: 230 VAC /50HZ O/P:FULL/50% LOAD Ta:25℃	PASS Test by certified Lab
3	RADIATION	EN55015 CLASS B	I/P: 230 VAC /50HZ O/P:FULL LOAD Ta:25℃	PASS Test by certified Lab
4	E.S.D	EN61000-4-2 AIR : 8KV / Contact : 4KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25℃	CRITERIA A/ Blank type CRITERIA B/ DA2&DA2Q type
5	E.F.T	EN61000-4-4 INPUT: 1KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25℃	CRITERIA A
6	SURGE	IEC61000-4-5 L-N :2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25℃	CRITERIA A
7	Test by certified Lab & Test Report Prepare Any contradictions of the test results, please refer to the latest EMC test report			

■ RELIABILITY TEST

ENVIRONMENT TEST

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>SPECIFICATION</th><th>TEST CONDITION</th><th>RESULT</th></tr>
<tr><td>1</td><td>TEMPERATURE RISE TEST</td><td colspan="3">MODEL： SPWM-150-24DA2Q
1. ROOM AMBIENT BURN-IN：2 HRS
I/P： 230VAC O/P： FULL LOAD Ta=24.3 ℃
2. HIGH AMBIENT BURN-IN： 2 HRS
I/P： 230VAC O/P： FULL LOAD Ta=46.2 ℃
<table>
<tr><th>NO</th><th>Position</th><th>ROOM AMBIENT Ta=24.3℃</th><th>HIGH AMBIENT Ta=46.2 ℃</th></tr>
<tr><td>1</td><td>RTH1</td><td>72.4℃</td><td>84.9℃</td></tr>
<tr><td>2</td><td>LF3</td><td>60.7℃</td><td>81.2℃</td></tr>
<tr><td>3</td><td>ZNR1</td><td>55.2℃</td><td>73.6℃</td></tr>
<tr><td>4</td><td>C2</td><td>57.7℃</td><td>77.9℃</td></tr>
<tr><td>5</td><td>L1</td><td>62.3℃</td><td>82.9℃</td></tr>
<tr><td>6</td><td>C10</td><td>65.2℃</td><td>85.6℃</td></tr>
<tr><td>7</td><td>L2</td><td>70.5℃</td><td>91.2℃</td></tr>
<tr><td>8</td><td>Q1</td><td>69.4℃</td><td>89.2℃</td></tr>
<tr><td>9</td><td>D5</td><td>70.6℃</td><td>90.8℃</td></tr>
<tr><td>10</td><td>C5</td><td>65.2℃</td><td>86.1℃</td></tr>
<tr><td>11</td><td>U2</td><td>70.7℃</td><td>91.3℃</td></tr>
<tr><td>12</td><td>C62</td><td>63.4℃</td><td>84.4℃</td></tr>
<tr><td>13</td><td>U1</td><td>66.9℃</td><td>87.2℃</td></tr>
<tr><td>14</td><td>Q2</td><td>73.4℃</td><td>95.1℃</td></tr>
<tr><td>15</td><td>T1</td><td>67.9℃</td><td>89.8℃</td></tr>
<tr><td>16</td><td>U100</td><td>70.1℃</td><td>92.1℃</td></tr>
<tr><td>17</td><td>Q100</td><td>62.4℃</td><td>84.5℃</td></tr>
<tr><td>18</td><td>C130</td><td>61.8℃</td><td>83.8℃</td></tr>
<tr><td>19</td><td>C105</td><td>63.7℃</td><td>85.8℃</td></tr>
<tr><td>20</td><td>Q110</td><td>59.4℃</td><td>83.7℃</td></tr>
<tr><td>21</td><td>RTH2</td><td>63.8℃</td><td>84.7℃</td></tr>
<tr><td>22</td><td>TC</td><td>57.7℃</td><td>80.1℃</td></tr>
</table></td></tr>
<tr><td>2</td><td>OVER LOAD BURN-IN TEST</td><td>NO DAMAGE
1 HOUR (MIN)</td><td>I/P： 230 VAC
O/P：124 % LOAD
Ta：25℃</td><td>TEST：OK</td></tr>
<tr><td>3</td><td>LOW TEMPERATURE
TURN ON TEST</td><td>TURN ON AFTER 2
HOUR</td><td>I/P： 305VAC/100VAC
O/P： 100/80 % LOAD
Ta=-25 ℃</td><td>TEST：OK</td></tr>
<tr><td>4</td><td>HIGH HUMIDITY
HIGH TEMPERATURE
HIGH VOLTAGE
TURN ON TEST</td><td>AFTER 12 HOURS
IN CHAMBER ON
CONTROL 45 ℃
NO DAMAGE</td><td>I/P： 315 VAC
O/P：FULL LOAD
Ta=45 ℃
HUMIDITY= 95 %R.H</td><td>TEST：OK</td></tr>
<tr><td>5</td><td>TEMPERATURE
COEFFICIENT</td><td>± 0.03 %(0℃~50℃)</td><td>I/P： 230 VAC
O/P：FULL LOAD</td><td>± 0.013 %(0~50℃)</td></tr>
</table>

6	STORAGE TEMPERATURE TEST	-40~80℃	1. Thermal shock Temperature： -45℃~ +90℃ 2. Temperature change rate ：25℃ / MIN 3. Dwell time low and high temperature ： 30 MIN/EACH 4. Total test cycle：10CYCLE 5. Input/output condition： STATIC TEST：OK
7	THERMAL SHOCK TEST	-20~45℃	1. Thermal shock Temperature： -25℃~ +50℃ 2. Temperature change rate ：25℃ / MIN 3. Dwell time low and high temperature ： 30 MIN/EACH 4. Total test cycle：16 CYCLE 5. Input/output condition： 15cycle:230V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle:230V/ FULL LOAD Burn In Test
8	VIBRATION TEST	5 ~ 100Hz, 2G 12min./1cycle, 72min. each along X, Y, Z axes	1 Carton & 1 Set (1) Waveform： Sine Wave (2) Frequency：5~100Hz (3) Sweep Time：12min/sweep cycle (4) Acceleration：3G (5) Test Time：180min in each axis (X.Y.Z) (6) Ta：25℃
9	CAPACITOR LIFE CYCLE	SUPPOSE C105 IS THE MOST CRITICAL COMPONENT (1) I/P： 230VAC O/P：FULL LOAD Ta=25 ℃ LIFE TIME (2) I/P： 230VAC O/P：FULL LOAD Ta=45 ℃ LIFE TIME (3) I/P： 230VAC O/P：75% LOAD Ta =45 ℃ LIFE TIME (4) I/P： 230VAC O/P：50% LOAD Ta =45 ℃ LIFE TIME	(1) 1071519HRS (2) 104713HRS (3) 278612HRS (4) 562341HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 1926.4K hrs min. Telcordia SR-332 (Bellcore) ; 158.1K hrs min. MIL-HDBK-217F (25℃)	
11	Ongoing Reliability Test	I/P：230VAC O/P：FULL LOAD TA=50℃ Demonstration Mean Time Between Failure : 50,000 hours	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	WUWQIN/ZHOUBIAO	WENF	WUWQ

2020.10.1 TAG-QA-009